

(c) (5 pts) An *adjacency list* representation. Assume the vector's length is known.

In an adjacency list representation, an array of lists indicates the vertices it shares a connection with. The size of the array is the number of vertices in the graph in which the array Adj is the list of vertices adjacent to the i^{th} vertex.

If we have this list, we can get the in- and out-degree by getting the direction of the edge and update the count of each vertex.

We must run a loop through each edge and vertex once to do this.

So, time complexity is $O(V+E)$